

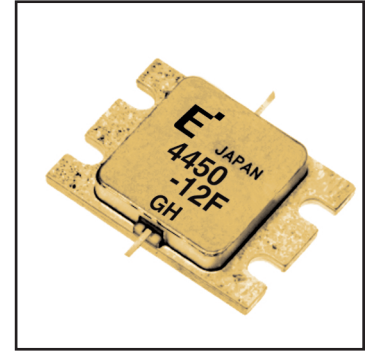
FEATURES

- High Output Power: $P_{1dB} = 41.5\text{dBm}$ (Typ.)
- High Gain: $G_{1dB} = 10.5\text{dB}$ (Typ.)
- High PAE: $\eta_{add} = 39\%$ (Typ.)
- Low $IM_3 = -46\text{dBc}$ @ $P_o = 30.5\text{dBm}$
- Broad Band: 4.4 ~ 5.0GHz
- Impedance Matched $Z_{in}/Z_{out} = 50\Omega$
- Hermetically Sealed Package

DESCRIPTION

The FLM4450-12F is a power GaAs FET that is internally matched for standard communication bands to provide optimum power and gain in a 50 ohm system.

Eudyna's stringent Quality Assurance Program assures the highest reliability and consistent performance.



ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_T	$T_c = 25^\circ\text{C}$	57.6	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ\text{C}$
Channel Temperature	T_{ch}		175	$^\circ\text{C}$

Fujitsu recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 32.0 and -5.6 mA respectively with gate resistance of 50Ω .

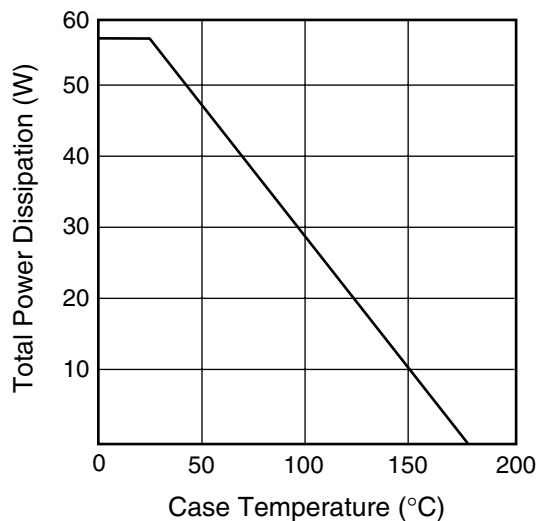
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ\text{C}$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5\text{V}, V_{GS} = 0\text{V}$	-	5800	8700	mA
Transconductance	g_m	$V_{DS} = 5\text{V}, I_{DS} = 3400\text{mA}$	-	2900	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5\text{V}, I_{DS} = 300\text{mA}$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -300\mu\text{A}$	-5.0	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10\text{V},$ $I_{DS} = 0.55 I_{DSS}$ (Typ.), $f = 4.4 \sim 5.0 \text{ GHz},$ $Z_S = Z_L = 50 \text{ ohm}$	40.5	41.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		9.5	10.5	-	dB
Drain Current	I_{dsr}		-	3250	3800	mA
Power-added Efficiency	η_{add}		-	39	-	%
Gain Flatness	ΔG		-	-	± 0.6	dB
3rd Order Intermodulation Distortion	IM_3	$f = 5.0 \text{ GHz}, \Delta f = 10 \text{ MHz}$ 2-Tone Test $P_{out} = 30.5\text{dBm}$ S.C.L.	-44	-46	-	dBc
Thermal Resistance	R_{th}	Channel to Case	-	2.3	2.6	$^\circ\text{C/W}$
Channel Temperature Rise	ΔT_{ch}	$10\text{V} \times I_{dsr} \times R_{th}$	-	-	80	$^\circ\text{C}$

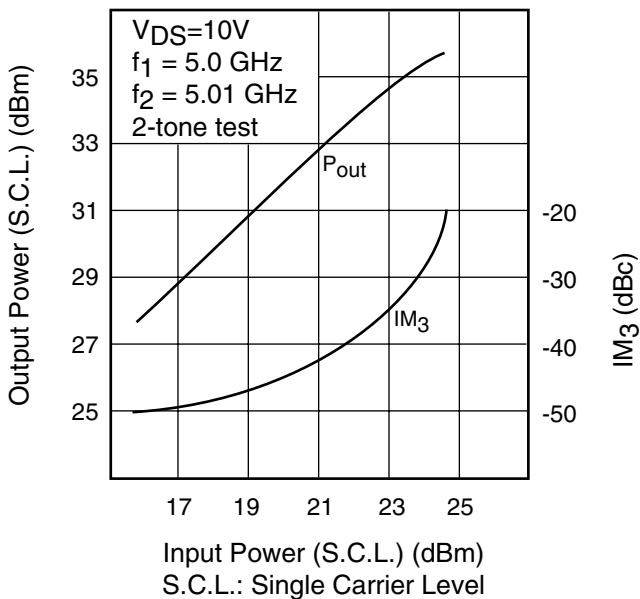
CASE STYLE: IK

G.C.P.: Gain Compression Point, S.C.L.: Single Carrier Level

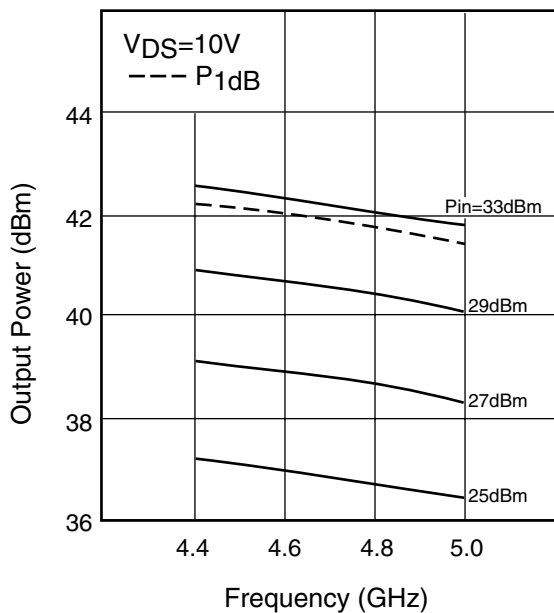
POWER DERATING CURVE



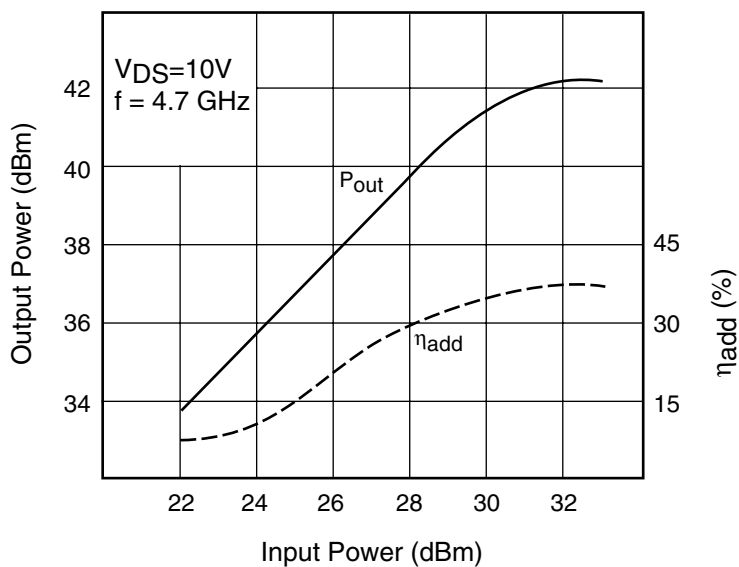
OUTPUT POWER & IM₃ vs. INPUT POWER

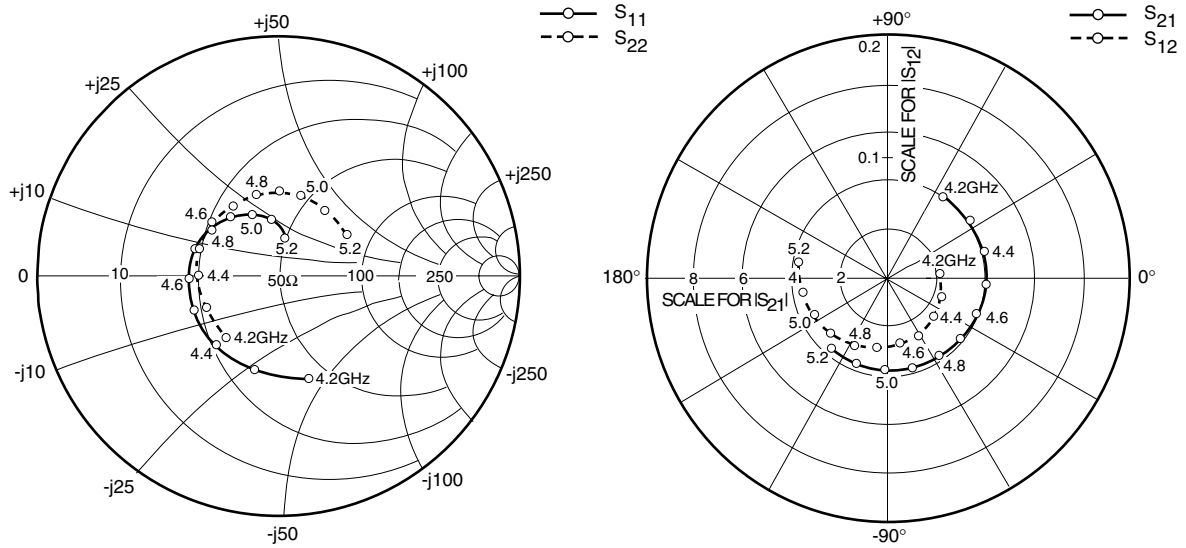


OUTPUT POWER vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

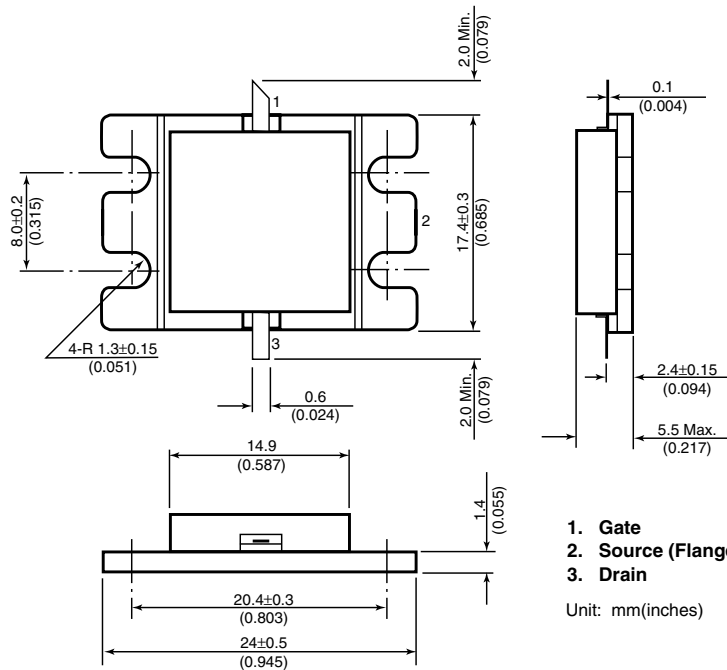
$V_{DS} = 10V$, $I_{DS} = 3400mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
4200	.443	-73.5	4.043	55.9	.042	3.7	.342	-130.3
4300	.400	-104.2	4.099	35.4	.046	-20.2	.332	-155.8
4400	.384	-131.9	4.068	15.3	.048	-39.5	.335	-179.0
4500	.379	-157.6	4.016	-3.8	.052	-61.9	.342	160.9
4600	.370	-178.8	3.925	-22.3	.054	-81.1	.342	142.5
4700	.364	161.8	3.842	-40.1	.059	-100.3	.342	124.2
4800	.341	144.8	3.786	-57.7	.062	-117.7	.349	106.8
4900	.321	128.8	3.736	-75.3	.066	-136.6	.352	90.8
5000	.279	112.4	3.711	-93.1	.068	-153.9	.346	74.5
5100	.238	97.1	3.711	-111.4	.072	-171.1	.332	55.4
5200	.168	80.2	3.698	-130.5	.077	169.6	.325	32.8

FLM4450-12F

C-Band Internally Matched FET

Case Style "IK" Metal-Ceramic Hermetic Package



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CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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